We hazard a guess that the demands of the botanical department of Harvard University are more responsible for these features than the judgment of the author. It seems a pity to attempt to galvanize the *Lessons* into a semblance of life again, the more because the book was not only the most popular and widely used, but the most useful text-book of its day; one whose admirable lucidity and directness may well be the envy of the text-book makers of a later generation. It earned for itself an honorable name and a secure place in memory, and should now be allowed to pass, albeit with something of the same regret and sense of loss as at the death of its loved and lamented author. The attempt to combine its method and the modern one is a mistake, as false in theory as it is likely to be futile in practice. Mr. Bergen recently attempted a similar feat in his *Foundations of botany*, offering the old in one hand and all varieties of the new in the other. Authors (perhaps we should say in this case departments of botany) ought to be content to adopt a method which seems to them best, maintain it consistently through the book, and offer it with the other books, written from a similar or a different standpoint, for the intelligent choice of teachers. The other course savors of the commercial rather than the scientific or educational.—C. R. B.

## MINOR NOTICES.

EUG. WARMING[5] has published an account of the very peculiar floral structures of certain Brazilian Burmanniaceae discovered by Dr. A. Glaziou, including a description of two new genera (*Glaziocharis* and *Triscyphus*) by Taubet.—J. M. C.

O. A. FARWELL has published a catalogue of the flora (Pteridophytes and Spermatophytes) of Detroit, being a reprint, with additions, from the Eleventh Annual Report of the Commissioners of Parks and Boulevards. It contains a total of 885 species and varieties.—J. M. C.

THE REPORT of the State Botanist of New York for 1900 has just appeared. It contains descriptions of forty-five new species and varieties of fungi. A section on edible fungi describes sixteen forms, three of which are new. Most of the new and edible species are illustrated in the thirteen colored double plates.—J. M. C.

A NEW FASCICLE[6] of Urban's *Symbolae Antillanae* has appeared. The first part (pp. 1–13) is a continuation of the botanical bibliography of the West Indies. The second (pp. 14–158) is a very interesting and apparently complete series of biographical notes of botanists who have visited the West

[5] WARMING, EUG., Sur quelques Burmanniacées recueillies au Bresil par le Dr. A. Glaziou. Bull. Acad. Roy. Sci. Danemark pp. 173–188. *pls. 3–4. figs. 1–6.* 1901.

[6] URBAN, IGNATIUS, Symbolae Antillanae seu fundamenta florae Indiae occidentalis. Vol. III. fasc. I. pp. 1–160. Leipzig: Gebrüder Borntraeger. 1902. *M* 9.

Indies. The last two pages begin the presentation of Piperaceae by C. de Candolle.—J. M. C.

THE THIRD FASCICLE[7] of Halácsy's *Flora of Greece* has appeared, completing the first volume. The previous parts were noticed in this journal for April (p. 290) and December (p. 419). The present part includes from Crassulaceae to Dipsaceae, and closes with a full index of the whole volume. The first fascicle[8] of the second volume has also appeared, containing the Compositae complete, and the beginning of Campanulaceae.—J. M. C.

THE SECOND, THIRD, AND FOURTH FASCICLES of the fifth volume of Thomé's *Flora von Deutschland* have appeared. As stated in a notice of the first fascicle (BOT. GAZ. 33: 71. 1902), this volume deals with cryptogams, excepting pteridophytes, which appeared in the first volume, and is the work of Dr. Walter Migula. The three fascicles received continue the presentation of the mosses, and contain twenty-three plates, eight of which are colored.—J. M. C.

THE SIXTH FASCICLE[9] of Engler's great work on the genera and families of African plants has just appeared, containing the Anonaceae by Engler and Diels. Twenty-two genera are recognized, three of which (*Asteranthe*, *Meiocarpidium*, and *Uvariastrum*) are described as new, and related to the largest genus, *Uvaria*, which includes forty-nine species. Numerous new species are described, and the thirty lithograph plates are models for such illustration.—J. M. C.

THE SECOND EDITION of Dörfler's useful directory of botanists[10] has just been issued. It has the same form and arrangement as the now well-known first edition. This one, however, contains 9,815 addresses, as against 6,455 in the first. The increase, both in number and accuracy, of the addresses in the United States is very marked. Mr. Dörfler renders the botanical world a distinct service in this publication—a service whose drudgery no one can appreciate who has not been through it. As the volume is published at his own risk botanists can reduce this and benefit themselves by purchasing a copy.—C. R. B.

[7] HALÁCSY, E. DE, Conspectus Florae Graecae. Vol. I. fasc. III. pp. 577–825. Leipzig: Wilhelm Engelmann. 1901. *M* 5.

[8] *Idem*. Vol. II. fasc. I. pp. 1–256. 1902. *M* 6.

[9] ENGLER, A., Monographien afrikanischer Pflanzenfamilien und Gattungen. VI. Anonaceae, bearbeitet von A. Engler und L. Diels. 4to. pp. 96. *pls.* 30. Leipzig: Wilhelm Engelmann. 1901. *M* 22.

[10] DÖRFLER, J., Botaniker-Adressbuch, Sammlung von Namen und Adressen der lebenden Botaniker aller Lander, der botanischen Gärten und der die Botanik pflegenden Institute, Gesellschaften und periodischen Publicationen. Zweite, neu bearbeitete und vermehrte Auflage. 8vo, pp. x + 356. Wien: J. Dörfler, III, Barichgasse 36. 1902.

THE PARTS of Engler's *Pflanzenreich* are appearing with remarkable rapidity. The eighth has now been published,[11] containing the Aceraceae (family 163 of the spermatophyte series) by F. Pax. The two genera are *Dipteronia*, a monotypic Chinese genus, and *Acer* with 114 species, 8 of which are new. The monograph is admirable in its painstaking care. Thirteen sections of *Acer* are recognized as follows: I. *Spicata* (30 spp.), II. *Palmata* (6 spp.), III. *Trifoliata* (6 spp.), IV. *Integrifolia* (6 spp.), V. *Indivisa* (9 spp.), VI. *Rubra* (4 spp.), VII. *Negundo* (3 spp.), VIII. *Glabra* (1 sp.), IX. *Platanoidea* (13 spp.), X. *Campestria* (10 spp.), XI. *Macrantha* (12 spp.), XII. *Lithocarpa* (9 spp.), and XIII. *Saccharina* (5 spp.). At the close of each section the geographical distribution is given and also the fossil forms. One map shows the distribution of the thirteen sections, and another the distribution of the fossil groups.—J. M. C.

DR. GY. ISTVANFFI[12] has produced a monumental work in publishing with editorial notes and commentaries the mycological classic of Charles de l'Escluse. This work, whose full title is "Fungorum in Pannonis Observatorum Brevis Historia," was published over 300 years ago, and is the foundation of Hungarian fungology and, to the honor of that country, the first scientific essay on mycology. Istvanffi's paper is a large quarto volume consisting of the following seven parts: (1) an exact reproduction of the *Fungorum Historia*, (2) historical investigations on the origin of the code and the determination of species, (3) biographical notes and an autobiographical sketch of l'Escluse, (4) a synoptical table of species, (5) the correspondence of l'Escluse, (6) catalogue of letters addressed to him, (7) the reproduction of the code with chromolithographic facsimiles of the original water-color sketches. These last are very interesting, and apparently executed with great accuracy. When not presenting original manuscripts Istvanffi has written in Magyar, followed immediately by a translation in French.— B. M. DAVIS.

THE SEVENTH PART of Wiesner's *Die Rohstoffe des Pflanzenreiches*[13] was issued in December last. The seventeenth section on Woods (to which the previous part was devoted) is completed, and the treatment of fibers begun. This section is by the author himself. The anatomical structure, physical and chemical characteristics, and methods of identification by polarization colors, anatomical peculiarities, and microchemical tests are described. A synopsis of fiber plants follows, the phrase being liberally construed as shown by the inclusion of such plants as *Zostera marina* (used in Venice for packing

[11] ENGLER, A., Das Pflanzenreich. Regni vegetabilis conspectus. Heft 8. Aceraceae von F. Pax. pp. 89. Leipzig: Wilhelm Engelmann. 1902. *M* 5.

[12] ISTVANFFI, Études et Commentaires sur le Code de l'Escluse. Budapest. 1900.

[13] Volume II. pp. 161–320. *figs.* 45–75. Leipzig: Wilhelm Engelmann, 1901. *M.* 5.

glassware), Eriophorum, Salix, and Epilobium (on account of the bristles and coma). The major part of the section, however, is devoted to an account of 43 fibers used in the arts. Only 9 of these are treated in the present part. The eighth part[14] has just appeared, completing the account of the fibers referred to above, and beginning the nineteenth section on subterranean parts. This section is an abstract of a paper prepared by Dr. A. E. v. Vogel, professor of pharmacognosy and pharmacology in the University of Vienna.—C. R. B.

THE AMOUNT of injury caused by oat smut in Wisconsin in the year 1901 is estimated by Professor R. A. Moore[15] in a recent bulletin to be $6,387,500, estimating the value of a bushel of oats at 35 cents. These figures were obtained as the result of careful estimates of the percentage of smut on 173 farms in 16 counties of the state by the author of the bulletin, and on 124 farms in 28 counties by former students, representing in all observations in 33 counties in the state. The latter's estimates gave an average of 15 per cent. smutted stalks, while the author's calculations, made ten days later, when the smut had more fully developed, gave 20 per cent. The determination was made by throwing a barrel hoop at random into a field and counting the total number of stalks inclosed and the number of those affected with smut. Several determinations were made in each field. It was found that fields sown with oats that had been soaked, and dried, before sowing for twenty minutes in a solution of one pound of 40 per cent. formalin in fifty gallons of water were entirely free from smut, even when grown beside fields not so treated and accordingly very badly smutted.—ERNST A. BESSEY.

THE FIRST PART of the studies "On the relation of phyllotaxis to mechanical laws," by Arthur H. Church, was noticed in this journal (**32**: 427. 1901), in which the theory was elaborated that "the arrangement of lateral members on a shoot-apex is possibly the expression of the symmetrical or asymmetrical distribution of growth-energy in the growing apex, and in a system for which uniform growth is postulated the appearances are to be mapped in terms of the phenomena of vortex construction, and represented graphically by the same geometrical construction as the lines of equal pressure and flow in circular or spiral vortices respectively." Such conditions of uniform growth do not usually obtain in a growing apex, but their consideration must precede that of varying and diminishing rates of growth. In the second part,[16] now before us, the special cases of phyllotaxis are considered

[14] Volume II. pp. 321–480. *figs. 76–155.* 1902. *M* 5.

[15] MOORE, R. A., Oat smut in Wisconsin—prevalence and method of eradication. Bulletin 91 Wisc. Agr. Expt. Sta. pp. 15, *figs. 2*, F 1902, Madison.

[16] CHURCH, A. H., On the relation of phyllotaxis to mechanical laws. Part II. Asymmetry and Symmetry. pp. 79–211. *pls. 11–25. figs. 36–80.* Oxford: Williams and Norgate. 1902. 5s.

under the following heads: (1) Asymmetry of the normal Fibonacci series, (2) Symmetrical construction, in which the Fibonacci ratios are lost, (3) The special case of "least concentrated" asymmetry, (4) Non-concentrated symmetry, (5) Multijugate systems, and (6) Anomalous systems. Subsequent sections will include the consideration of secondary disturbances in the primary system, the relations of dorsiventral primordia, deductions from the mathematical investigations of the log. spiral systems, and the relation of all these factors to the interpretation of floral structures in the form of floral diagrams. — J. M C.

## NOTES FOR STUDENTS.

L. GUIGNARD[17] has discovered "double fertilization" to be a common phenomenon among the Ranunculaceae. To the species he had previously announced in 1900 (*Caltha palustris*, *Ranunculus Flammula*, *Helleborus foetidus*, *Anemone nemorosa*, *Clematis Viticella*, and *Nigella sativa*) he now adds *Nigella Damascena* and *Ranunculus Cymbalaria*. Nawaschin published double fertilization in *Delphinium elatum* two years ago. Double fertilization, therefore, may be regarded as a general habit among Ranunculaceae.— J. M. C.

DAVID GRIFFITHS[18] has described the self-burial of the seeds of *Plantago fastigiata* in the desert region of southern Arizona. His conclusion is that the function of the mucilage is the burial of the seed, and that it is accomplished by the tension set up owing to the contraction of the expanded mucilage which has become firmly attached around its outer and lower edges to the particles of soil into which it has penetrated, resulting in a compacting of the soil immediately below the seed and its coat so as to form a pit into which the seed is forced. The cup-shaped depression is subsequently filled with earth by entirely external influences.—J. M. C.

IN A RECENT CONTRIBUTION[19] from the Gray Herbarium, M. L. Fernald presents the northeastern Carices of the section Hyparrhenae, reaching conclusions very different from those generally accepted by American caricologists. After discussing in considerable detail the more important questions, he presents a synopsis of the forty-one recognized species, including descriptions of four new species and ten new varieties. In the second part of the contribution the variations of some boreal carices are discussed, the species being *C. aquatilis*, *C. pilulifera*, *C. communis*, *C. pennsylvanica*, *C. umbellata*, *C. vaginata*, *C. saltuensis*, and *C. capillaris*.— J. M. C.

[17] Double fécondation chez les Renonculácees. Jour. Botanique **15**: 394-408. *figs. 1–16*. 1901.

[18] A novel seed planter. Bull. Torr. Bot. Club **29**: 164-169. 1902.

[19] FERNALD, M. L., Contributions from the Gray Herbarium of Harvard University. New Series, no. 22. Proc. Amer. Acad. **37**: 447–514. *pls. 1–5*. 1902.